

SMC-EZ1016DT
SMC-EZ1024DT

EZ Switch™ 10/100 16/24-port
Unmanaged Fast Ethernet Switch

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COMPLIANCES

FCC - Class A

Federal Communication Commission Interference Statement

This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

EC Conformance Declaration - Class A

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Frutuós Gelabert 6-8, 2o, 4a,
08970 - Sant Joan Despí,
Barcelona, Spain.

This information technology equipment complies with the requirements of the Council Directive 2004/108/EC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 2006/95/EC for electrical equipment used within certain voltage limits and the Amendment Directive 2006/95/EC. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI Emission:

- Limit class A according to EN 55022:2006 (EMC)
- Limit class A for harmonic current emission according to EN 61000-3-2/2000+A2:2005
- Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995+A1:2001+A2:2005

Immunity:

- Product family standard according to EN 55024:1998+A1:2001+A2:2003
- Electrostatic Discharge according to EN 61000-4-2:2001 ED.1.2
(Contact Discharge: ± 4 kV, Air Discharge: ± 8 kV)
- Radio-frequency electromagnetic field according to EN 61000-4-3:2006 ED.3.0
(80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Electrical fast transient/burst according to EN 61000-4-4:2004 ED.2.0(AC/DC power supply: ± 1 kV, Data/Signal lines: ± 0.5 kV)
- Surge immunity test according to EN 61000-4-5:2005 ED.2.0
(AC/DC Line to Line: ± 1 kV, AC/DC Line to Earth: ± 2 kV)
- Immunity to conducted disturbances, Induced by radio-frequency fields:
EN 61000-4-6:2006 ED.2.2 (0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Power frequency magnetic field immunity test according to EN 61000-4-8:2001 ED.1.1 (1 A/m at frequency 50 Hz)
- Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:2004 ED.2.0(>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)

LVD:

- EN 60950-1:2006

VCCI - Class A

この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Please read the following safety information carefully before installing the Switch:

WARNING: Installation and removal of the unit must be carried out by qualified personnel only.

- This guide is intended for use by network administrators who are responsible for setting up and installing network equipment; consequently it assumes a basic working knowledge of LANs (Local Area Networks).
- The unit must be connected to an earthed (grounded) outlet to comply with international safety standards.
- Do not connect the unit to an A.C. outlet (power supply) without an earth (ground) connection.
- The appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN 60320/IEC 320 appliance inlet.
- The socket outlet must be near to the unit and easily accessible. You can only remove power from the unit by disconnecting the power cord from the outlet.
- This unit operates under SELV (Safety Extra Low Voltage) conditions according to IEC 60950. The conditions are only maintained if the equipment to which it is connected also operates under SELV conditions.

France and Peru only

This unit cannot be powered from IT. supplies. If your supplies are of IT type, this unit must be powered by 230 V (2P+T) via an isolation transformer ratio 1:1, with the secondary connection point labelled Neutral, connected directly to earth (ground). †Impédance à la terre

Power Cord Set	
U.S.A. and Canada	The cord set must be UL-approved and CSA certified.
	The minimum specifications for the flexible cord are: - No. 18 AWG - not longer than 2 meters, or 16 AWG. - Type SV or SJ - 3-conductor
	The cord set must have a rated current capacity of at least 10A.
	The attachment plug must be an earth-grounding type with NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
Denmark	The supply plug must comply with Section 107-2-D1, Standard DK2-1a or DK2-5a.
Switzerland	The supply plug must comply with SEV/ASE 1011.
U.K.	The supply plug must comply with BS1363 (3-pin 13 A) and be fit-ted with a 5 A fuse which complies with BS1362.
	The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3GO.75 (minimum).
Europe	The supply plug must comply with CEE7/7 (.SCHUKO.).
	The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3GO.75 (minimum).
	IEC-320 receptacle.

Veillez lire à fond l'information de la sécurité suivante avant d'installer le Switch:

AVERTISSEMENT: L'installation et la dépose de ce groupe doivent être confiés à un personnel qualifié.

- Ne branchez pas votre appareil sur une prise secteur (alimentation électrique) lorsqu'il n'y a pas de connexion de mise à la terre (mise à la masse).
- Vous devez raccorder ce groupe à une sortie mise à la terre (mise à la masse) afin de respecter les normes internationales de sécurité.
- Le coupleur d'appareil (le connecteur du groupe et non pas la prise murale) doit respecter une configuration qui permet un branchement sur une entrée d'appareil EN 60320/IEC 320.
- La prise secteur doit se trouver à proximité de l'appareil et son accès doit être facile. Vous ne pouvez mettre l'appareil hors circuit qu'en débranchant son cordon électrique au niveau de cette prise.
- L'appareil fonctionne à une tension extrêmement basse de sécurité qui est conforme à la norme IEC 60950. Ces conditions ne sont maintenues que si l'équipement auquel il est raccordé fonctionne dans les mêmes conditions.

France et Pérou uniquement:

Ce groupe ne peut pas être alimenté par un dispositif à impédance à la terre. Si vos alimentations sont du type impédance à la terre, ce groupe doit être alimenté par une tension de 230 V (2 P+T) par le biais d'un transformateur d'isolement à rapport 1:1, avec un point secondaire de connexion portant l'appellation Neutre et avec raccordement direct à la terre (masse).

Cordon électrique - Il doit être agréé dans le pays d'utilisation	
Etats-Unis et Can-ada:	Le cordon doit avoir reçu l'homologation des UL et un certificat de CSA.
	Les spécifications minimales pour la corde flexible sont AWG No. 18, ou AWG No. 16 pour une longueur inférieure à 2 mètres: - type SV ou SJ - 3 conducteurs
	Le cordon doit être en mesure d'acheminer un courant nominal d'au moins 10 A.
	La prise femelle de branchement doit être du type à mise à la terre (mise à la masse) et respecter la configuration NEMA 5-15P (15 A, 125 V) ou NEMA 6-15P (15 A, 250 V).
Danemark:	La prise mâle d'alimentation doit respecter la section 107-2 D1 de norme DK2 1a ou DK2 5a.

Cordon électrique - Il doit être agréé dans le pays d'utilisation	
Suisse:	La prise mâle d'alimentation doit respecter la norme SEV/ASE 1011.
Europe	La prise secteur doit être conforme aux normes CEE 7/7 (.SCHU- KO. LE cordon secteur doit porter la mention <HAR> ou <BASEC> et doit être de type HO3VVF3GO.75 (minimum).

Bitte unbedingt vor dem Einbauen des RPU die folgenden Sicherheitsanweisungen durchlesen:

WARNUNG: Die Installation und der Ausbau des Geräts darf nur durch Fachpersonal erfolgen.

- Diese Anleitung ist für die Benutzung durch Netzwerkadministratoren vorgesehen, die für die Installation und das Einstellen von Netzwerkkomponenten verantwortlich sind; sie setzt Erfahrung bei der Arbeit mit LANs (Local Area Networks) voraus.
- Das Gerät sollte nicht an eine ungeerdete Wechselstromsteckdose angeschlossen werden.
- Das Gerät muß an eine geerdete Steckdose angeschlossen werden, welche die internationalen Sicherheitsnormen erfüllt.
- Der Gerätestecker (der Anschluß an das Gerät, nicht der Wandsteckdosenstecker) muß einen gemäß EN 60320/IEC 320 konfigurierten Geräteeingang haben.
- Die Netzsteckdose muß in der Nähe des Geräts und leicht zugänglich sein. Die Stromversorgung des Geräts kann nur durch Herausziehen des Gerätenetzkabels aus der Netzsteckdose unterbrochen werden.
- Der Betrieb dieses Geräts erfolgt unter den SELV-Bedingungen (Sicherheitskleinstspannung) gemäß IEC 60950. Diese Bedingungen sind nur gegeben, wenn auch die an das Gerät angeschlossenen Geräte unter SELV-Bedingungen betrieben werden

Stromkabel.

Dies muss von dem Land, in dem es benutzt wird geprüft werden:

Schweiz	Dieser Stromstecker muß die SEV/ASE 1011 Bestimmungen einhalten.
Europe	Das Netzkabel muß vom Typ HO3VVF3GO.75 (Mindestanforderung) sein und die Aufschrift <HAR> oder BASEC> tragen. Der Netzstecker muß die Norm CEE 7/7 erfüllen (.SCHUKO.).

Warnings and Cautionary Messages

Warning: This product does not contain any serviceable user parts.

Warning: Installation and removal of the unit must be carried out by qualified personnel only.

Warning: When connecting this device to a power outlet, connect the field ground lead on the tri-pole power plug to a valid earth ground line to prevent electrical hazards.

Caution: Wear an anti-static wrist strap or take other suitable measures to prevent electrostatic discharge when handling this equipment.

Caution: Do not plug a phone jack connector in the RJ-45 port. This may damage this device. Les raccordeurs ne sont pas utilisé pour le système téléphonique!

Caution: Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

Warnings (in German)

Achtung: Dieses Produkt enthält keine Teile, die eine Wartung vom Benutzer benötigen.

Achtung: Installation und Deinstallation des Gerätes müssen von qualifiziertem Servicepersonal durchgeführt werden.

Achtung: Wenn das Gerät an eine Steckdose angeschlossen wird, muß der Masseanschluß n Netzstecker mit Schutzerde verbunden werden, um elektrische Gefahren zu vermeiden.

Warnings (in Korean)

A 급기기 (업무용 정보통신기기)

이 기기는 업무용으로 전자파 등록을 한 기기 이오니 판매자 또는 사용자는 이 점을 주의 하시기 바라며, 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Environmental Statement

The manufacturer of this product endeavors to sustain an environmentally-friendly policy throughout the entire production process. This is achieved through the following means:

- Adherence to national legislation and regulations on environmental production standards.
- Conservation of operational resources.
- Waste reduction and safe disposal of all harmful un-recyclable by-products.
- Recycling of all reusable waste content.
- Design of products to maximize recyclables at the end of the product's life span.
- Continual monitoring of safety standards.

End of Product Life Span

This product is manufactured in such a way as to allow for the recovery and disposal of all included electrical components once the product has reached the end of its life.

Manufacturing Materials

There are no hazardous nor ozone-depleting materials in this product.

Documentation

All printed documentation for this product uses biodegradable paper that originates from sustained and managed forests. The inks used in the printing process are non-toxic.

Purpose

This guide details the hardware features of the switch, including its physical and performance-related characteristics, and how to install the switch.

Audience

The guide is intended for use by network administrators who are responsible for installing and setting up network equipment; consequently, it assumes a basic working knowledge of LANs (Local Area Networks). Diese Anleitung ist für die Benutzung durch Netzwerkadministratoren vorgesehen, die für die Installation und das Einstellen von Netzwerkkomponenten verantwortlich sind; sie setzt Erfahrung bei der Arbeit mit LANs (Local Area Networks) voraus.

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INTRODUCTION

The EZ Switch™ 10/100 SMC-EZ1016DT and SMC-EZ1024DT are 16/24-port Fast Ethernet switches. The 10BASE-T/100BASE-TX ports deliver dedicated 10/100 Mbps links to each attached LAN segment – all with conventional cabling and adapters.

Auto-negotiation is used to select the optimal communication mode for each connection. Auto-sensing is used to select the optimal transmission speed for each connection. With store-and-forward switching and flow control, maximum data integrity is always maintained, even under heavy loading. Easy installation and reliability make this plug-and-play switch an ideal choice for smooth Fast Ethernet integration.

Green Saving Switches

The Green Saving technologies are intelligent, innovative algorithms that detect link status and distance to best save power while maintaining performance and stability.

- **Power saving by Auto-Detection of the number of active ports:**

The SMC-EZ1016DT/SMC-EZ1024DT switches will auto-detect the link status and automatically cut off power at a given port during periods of idle (when a port is unconnected or a PC is turned off). After it detects an incoming signal, it wakes up from power saving mode and operates in normal mode.

- **Power saving by Cable length Auto-Detection:**

The SMC-EZ1016DT/SMC-EZ1024DT switches can actively detect the presence of a shorter cable and determines the appropriate power level based on cable length so there'll be less power consumption when the link distance is shorter.

Features and Benefits

- Save up to 59% of power usage with the SMC-EZ1016DT/SMC-EZ1024DT switches
 - If PCs connected to the switches are turned off, the switches can **save up to 59%** for the power used. And even under full traffic load, the switches can still save up to 21% power consumption.
 - If cable length is less than 20 meters, each switch can **save up to 12%** for the power used.
- Auto-negotiation of half or full duplex, and auto-sensing of transmission speed, on all ports
- Auto configuration for MDI/MDI-X cable connection allows connections to servers, workstations, hubs or switches to be made with straight-through cabling
- ANSI/IEEE 802.3u compliance ensures compatibility with standards-based hubs, switches and cards from any vendor
- Store-and-forward switching ensures error-free transmission
- Half- and full-duplex flow control prevents packets from being dropped under heavy loading
- Plug-and-play
- "At-a-glance" LEDs for port and system status monitoring
- Desktop and rack mountable

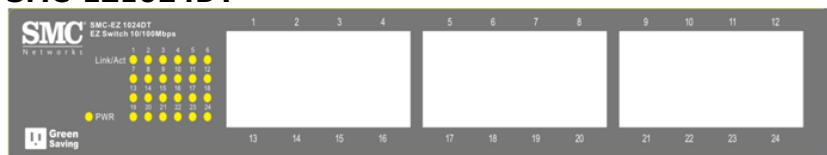
Front Panel LEDs

The front panel of the switch provides a link status LED for each RJ-45 port. In addition, the front panel also contains status LEDs for “at-a-glance” system monitoring. The following table details the functions of the various indicators:

Port and Switch Status LEDs		
LED	Condition	Status
Power	On Green	The switch is receiving power.
Ports		
Link/Act	On	The port has established a valid network connection.
	Flashing	Traffic is passing through the port.
	Off	The port has not established any network connection.

Front Panel

SMC-EZ1024DT



SMC-EZ1016DT



Rear Panel

The AC power connector is located on the rear panel of the switch.

INSTALLING THE SWITCH

Before installing the switch, verify that you have all the items listed under “Package Contents.” Note that the switch can be installed on any suitably large flat surface or in a standard EIA 19-inch rack.

Package Contents

The EZ Switch 10/100 includes:

- EZ Switch 10/100 (SMC-EZ1016DT or SMC-EZ1024DT)
- Four rubber foot pads
- Rack-mount bracket kit
- Appropriate AC power cord
- This User Manual

Selecting a Site

Be sure to follow the site selection guidelines below when choosing a location:

- Select a suitable location for the switch:
 - It should be accessible for installing, cabling and maintaining the switch.
 - The temperature and humidity should be within the ranges listed in the specifications.
 - The status LEDs should be clearly visible.
 - There should be adequate space (approximately two inches) on all sides for proper air flow.
- Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference such as radios, transmitters, etc.
- Make sure that a properly grounded power outlet is within 2.44 meters (8 feet) of the switch and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended.

Instructions

- 1. Positioning the Switch:** For desktop or shelf mounting, attach the four adhesive foot pads to the bottom of the switch. For rack mounting, install into a standard EIA 19-inch rack using the included brackets.
- 2. Applying Power:** Plug one end of the power cord into the socket on the switch's rear panel, and the other end into an appropriate electrical outlet. Check the Power LED to be sure power is on.

Note: It is not necessary to power off the switch before connecting or disconnecting any UTP cables, as these actions will not disrupt the operation of other devices attached to the switch.

- 3. Connecting PCs:** Connect each PC to an RJ-45 port on the switch using Category 5 or 5e shielded or unshielded twisted-pair (UTP or STP) cable, maximum length 100 meters (328 ft). The EZ Switch 10/100 will support up to 16 or 24 PCs. All ports on the switch support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

Note: If an attached device does not support auto-negotiation, the data rate will be sensed automatically and the communication mode will default to half duplex.

- 4. Cascading Switches and Other Network Devices:** All the ports on the switch support automatic MDI/MDI-X configuration for cable connections. This allows you to use straight-through cable to connect to other switches or hubs from any port on the switch. No crossover cables or other device settings are needed. See the Cable Specifications.

Caution: Do not plug a phone jack connector into any RJ-45 port. This switch, instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

TROUBLESHOOTING

Diagnosing Switch Indicators

1. Symptom

Power LED does not light after power on.

Probable Causes

- AC power cord may be defective.

Possible Solutions

- Check for loose connections.
- Check the power outlet by using it for another device.
- Replace the AC power cord.

2. Symptom

Link LED does not light after connection is made.

Probable Causes

- Switch port, network card or cable may be defective.

Possible Solutions

- Check that the switch and attached device are both powered on.
- Be sure the network cable is connected to both devices.
- Verify that Category 5 or better cable is used for 10/100 Mbps connections and that the length of any cable does not exceed 100 meters (328 feet).
- Check the network card and cable connections for defects.
- Replace the defective card or cable if necessary.

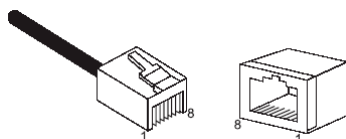
CABLES

Cable Specifications

Cable Types and Specifications			
Cable	Type	Max. Length	Connector
10BASE-T	2-pair Cat. 3 or better 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	2-pair Cat. 5 or better 100-ohm UTP	100 m (328 ft)	RJ-45

10BASE-T/100BASE-TX Pin Assignments

Caution: DO NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.



Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100-ohm Category 3 or better cable for 10 Mbps connections or 100-ohm Category 5 or better cable for 100 Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

Because all ports on this switch support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3 and 6 at the other end of the cable.

The table below shows the 10BASE-T/100BASE-TX MDI-X and MDI port pinouts.

Pin	MDI-X Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)
4,5,7,8	Not used at 10/100 Mbps	Not used at 10/100 Mbps

PRODUCT SPECIFICATIONS

EZ Switch 10/100

Standards Conformance	IEEE 802.3-2002 Ethernet, Fast Ethernet Full-duplex flow control
Communication Rate	10 and 100Mbps
Communication Mode	Full or half duplex at 10/100 Mbps
Media Supported	10BASE-T: 100-ohm Category 3 or better twisted-pair 100BASE-TX: 100-ohm Category 5 or better twisted pair
Number of Ports	SMC-EZ1016DT: 16 RJ-45 10/100 BASE-T ports SMC-EZ1024DT: 24 RJ-45 10/100 BASE-T ports
Indicator Panel	Power Ports: Link/Act
Dimensions	SMC-EZ1016DT: 21.6x13.3x4.2cm(8.5x5.2x1.7in) SMC-EZ1024DT: 26.7x16.1x4.2cm(10.5x6.3x1.7in)
Weight	SMC-EZ1016DT: 870g (1.9 lbs) SMC-EZ1024DT: 1376g (3 lbs)
MAC Address Table	8 K entries
Memory Buffer	SMC-EZ1016DT: 160Kbytes SMC-EZ1024DT: 160Kbytes
Power Consumption	SMC-EZ1016DT: 6.831 Watts SMC-EZ1024DT: 8.514 Watts
Power Requirement	Input Voltage: 100 - 240 VAC@50-60 Hz
Temperature	Operating: 0 ~ 40 °C / 32 ~ 104 °F
Humidity	10% to 90% non-condensing
EMC/Safety Compliances	CE Mark
Immunity	EN 61000-4-2/3/4/5/6/8/11
Emissions	FCC Class A, VCCI Class A

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Unmanaged Fast Ethernet Switch